

METHOD OF INHIBITING METAL SILICIDE ENCROACHMENT IN A TRANSISTOR

Abstract of the Disclosure

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A method inhibits metal silicide encroachment in channel regions in a transistor that uses metal silicide as an electrical contact to its terminals. A metal layer is deposited overlying the transistor. A first anneal that is a low temperature anneal forms metal silicide regions to source, gate and drain terminals of the transistor. The low temperature inhibits

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lateral encroachment. Unsilicided portions of the metal are removed and followed by an ion implant of an element, such as nitrogen, that diffuses into the metal silicide regions. A second anneal at a higher temperature than the first anneal is completed wherein the implanted nitrogen ions prevent lateral encroachment of metal silicide.